

NETWORKS

FAQ

Q How should I view the video and audio from an IP camera remotely over the internet?

A Unless your router is one of the few that will configure the correct settings automatically using UPnP, you'll have to forward ports for the web interface and the video/ audio stream.

Usually, the web interface will be on port 80 (the port for HTTP). The second port is likely to be RTSP port 554 for the video. For mobile phone streaming, you might also need an additional RTP port. To forward the port to the camera's IP address, it's sensible to first assign a static IP address to the camera, and make sure you also set a password to prevent unauthorised users viewing the feed.

Jim Martin
Deputy Editor

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TP-LINK TL-WR941D

★★★★★

COMPUTER SHOPPER
BUDGET BUY

£38 inc VAT

From <http://svp.co.uk>

TP-Link's TL-WR941D cable internet wireless router is the cheapest Draft-N wireless router that we've reviewed by a long way. It's so new that it wasn't even on sale as we went to press, but we've been told that it will cost just £38 including VAT, which makes it a bargain.

As you might expect, the low price means there's not the same polished install routine that you get with big-brand routers. Instead, you have to use the web-based configuration page. There's a setup wizard that takes you through configuring your internet connection and setting up basic wireless settings, but it's a shame that it doesn't address wireless security.

Instead, you'll have to turn security on manually. This is easy enough, and there's a choice of WPA, WPA2 or WEP. However, we noticed a slight anomaly: the wireless settings page had our country selected as Vietnam, even though we'd changed this to UK in the setup wizard.

Once you've finished setting up the wireless connection, you'll need to go into the security settings section and turn on the firewall, which is off by default. This is a strange decision, and we'd have preferred the security of it being on. In these advanced pages, you'll also find the usual range of settings for port forwarding, UPnP and dynamic DNS. There's no QoS, but at this price we weren't expecting it.

A wireless router's performance, including stability at range, is really important, and we were pleased that the TL-WR941D performed well. With our Centrino laptop, the results were impressive and the



5.4Mbit/s at 25m was really good. This shows that the router delivers a strong signal and should provide enough coverage for most homes.

Switching to TP-Link's TL-WN821N USB adaptor, we got the fastest results at 1m that we've ever seen from a Draft-N wireless router. However, at distance we noticed a sharp drop in speeds, although 13Mbit/s at 25m is still good. If you want to increase range and performance, you can upgrade the router's three antennas to high-gain models. This is a rare feature on such a cheap router where fixed antennas are normal.

The USB adaptor supports TP-Link's Quick Secure Setup (QSS) technology, where you can join a client to the wireless network by typing in the router's PIN. QSS is also compatible with WPS, so you can use any WPS-compatible client, too. While QSS works, it's more hassle than using Windows' wireless client and simply typing in your WPA password.

The TL-WR941D might not have the polished installation and management features of big-brand routers, but at this price we can forgive that. If you want a Draft-N router but don't have much money to spend, this is a reliable choice and a good performer.

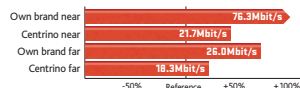
David Ludlow

SUMMARY

- ✓ Good performance
- ✓ Excellent value
- ✗ Web interface can be confusing

WIRELESS ROUTER Draft 802.11n (300Mbit/s), 4x 10/100 LAN ports, 1x WAN port (cable modem), UPnP, 28x200x140mm, one-year warranty **POWER CONSUMPTION** 3W on
PART CODE TL-WR941D
DETAILS www.tp-link.com

PERFORMANCE (see page 64)



Also consider...

BUFFALO WBM-R-G125

★★★★★

COMPUTER SHOPPER
BEST BUY

£52 inc VAT

From www.kikatek.com

It may be 802.11g rather than Draft-N, but Buffalo's WBM-R-G125 provides fantastic speeds for a very low price. It's also simple to configure, taking just a few minutes. Buffalo's CardBus adaptor, which costs just £18 extra, will improve your speeds even further. Its throughput at 25m also rivals some of the more expensive Draft-N routers.



WIRELESS ROUTER 802.11g (125Mbit/s), 4x 10/100 Ethernet ports, WAN port (ADSL2+ modem), UPnP, QoS
PART CODE WBM-R-G125
DETAILS www.buffalotech.com
FULL REVIEW Nov 2007



LINKSYS WAG325N Wireless-N ADSL Gateway

★★★★★

COMPUTER SHOPPER
BEST BUY

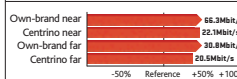
£70 inc VAT

From www.broadbandstuff.co.uk

Linksys's WAG325N Wireless-N ADSL Gateway managed the fastest transfer rates we've ever seen from wireless kit in our tests, and its range was excellent, too. Centrino performance was equally impressive, and we had no trouble connecting at 25m. This wireless ADSL router was simple to set up and configure, and is excellent value.



WIRELESS ADSL ROUTER Draft 802.11n (300Mbit/s), 4x 10/100 Ethernet ports, WAN port (ADSL2+ modem), UPnP, QoS
PART CODE WAG325N
DETAILS www-uk.linksys.com
FULL REVIEW Sep 2007



LINKSYS PVC2300-EU

★★★★★

£180 inc VAT
From www.cbccomputers.com

The PVC2300-EU is an IP camera that's aimed squarely at business users. It has all the features that businesses will need, but at a surprisingly low price. One of its main attractions is power over Ethernet, which means you won't need to locate the camera near a power socket.

It's noticeably larger than most consumer IP cameras and has a strong aluminium body, but it's for indoor use only. The standard lens can be replaced with others compatible with the CS mount standard, if you need something with a wider angle or an optical zoom.

Both MPEG4 and MJPEG codecs are supported simultaneously. MPEG4 is more efficient for viewing over the web, while MJPEG offers higher quality. Maximum resolution is 640x480 at 30fps and unlike many IP cameras we've seen it actually approaches that frame rate when viewed over a LAN. You have to adjust the focus manually, but images are sharp and colours relatively faithful. There's a 4x digital zoom, but this is pointless as it provides no extra detail.

A potentially useful feature is the night mode, which works relatively well in dim conditions. However, you'll want to invest in an infrared lamp for night vision; the PVC2300-EU has an integrated IR cut filter. There are plenty of other options, too. One is a pan/tilt base, so that the direction of the camera can be controlled remotely, while a GPIO connector on the rear lets you attach a variety of sensors such as PIR (for movement) or smoke detectors. It also provides



power for a door lock or siren. Finally, there are mic and speaker mini-jack connections. The mic connection is useful if you don't want to use the integrated mic, and the speaker mini-jack will come in handy if you want to make use of the two-way audio.

Setup is a breeze thanks to a discovery wizard, which runs from the CD. Once you've named the camera and decided whether you are going to use a static IP or DHCP address, you're taken to the camera's

web interface. Here, you can view live video and change more options, such as overlaying the date and time on the feed and setting up email addresses to which you can send alerts and FTP servers to which you can upload video.

Motion detection is supported, and you can select three regions in which to detect motion. The bundled LinksysOne Surveillance Utility has monitoring, playback and recording modules, and supports up to 16 cameras. You can set recording schedules and easily jump to events in the

playback module, which can be played at various speeds. If you need to monitor live video remotely, there's support for 3G phones, QuickTime clients and web browsers.

The PVC2300-EU is excellent value at this price, and a great choice for businesses. If you need a wireless version, then the WVC2300 costs just £23 more from www.kikatek.co.uk.

Jim Martin

SUMMARY

- ✓ Good value
- ✓ Power over Ethernet
- ✗ Poor quality in low light

WIRED IP CAMERA 640x480 resolution, 10/100Mbit/s Ethernet, night vision, motion detection, power supply included POWER CONSUMPTION 5W on PART CODE PVC2300-EU DETAILS www.linksys.com

CHOOSING A... Wireless Router

Follow the steps to find your ideal specs

STANDARD: 802.11g (54Mbit/s)

ETHERNET PORTS: 4

BROADBAND CONNECTION: Ethernet WAN port

Recommended minimum in grey

1 A basic wireless router with the specifications above will cost around £25. As a standard 802.11g wireless router, it is quick enough to share an internet connection, but a little slow for file sharing. It doesn't have a built-in modem, so you'll have to use it with an existing broadband modem that has an Ethernet port.

2 If you have ADSL, get a wireless router that has a built-in ADSL modem. This will cost you more than a standard router, but lets you connect your router directly to your broadband connection without a separate external modem. Try to get a router with an ADSL2+ modem, as this will support broadband connections up to 24Mbit/s with an appropriate ISP.

3 Want to share large wireless files over your network? You'll need to upgrade to a MIMO or Draft-N router. MIMO routers are usually WiFi compliant and will get you transfer speeds of around 30Mbit/s. Draft-N routers are faster still, but as they're pre-standard you may have problems getting them working with kit in the future. Both MIMO and Draft-N routers need matching network adaptors to run at full speed.

4 If you're having problems getting a wireless signal in your house, a MIMO or Draft-N router can help. Alternatively, look to buy a hi-gain antenna for your router. This will boost the signal and improve throughputs and ranges to the whole of the house. You can also look into adding a hi-gain antenna to a PC's network adaptor.

5 If you've got a printer you want to share on your network, look for a wireless router with a built-in USB port and print server. Don't worry if you can't find one that matches your other requirements, though, as you can always add a dedicated wireless print server later on. Finally, if you're interested in making voice calls using a SIP connection, look for a router with built-in VoIP support as this can save you money.

D-LINK DHP-301

★★★★★

£85 inc VAT
From www.purelygadgets.co.uk

COMPUTER SHOPPER
BEST BUY

D-Link's HomePlug network adaptors use your power lines for network cables, so you can create a network without wiring your home. They're also good for those places where wireless refuses to work. These adaptors have a maximum speed of 200Mbit/s, although they actually run at a similar speed to Draft-N wireless networking. They're an excellent choice if you want simple networking.



POWERLINE NETWORKING KIT Two 200Mbit/s HomePlug AV Ethernet adaptors PART CODE DHP-301 DETAILS www.dlink.co.uk FULL REVIEW Oct 2007



SMC SMC7904WBRA-N bundle

★★★★★

£77 inc VAT
From www.broadbandstuff.co.uk

COMPUTER SHOPPER
BUDGET BUY

This wireless ADSL2+ router and USB adaptor bundle from SMC is a simple, inexpensive way to upgrade to a Draft-N network. The USB adaptor provides great performance and it supports WPS for easy and secure setup. You get all the usual features including UPnP, port forwarding and Dynamic DNS. Only QoS is missing.



ADSL WIRELESS ROUTER Draft 802.11n (300Mbit/s), 4x 10/100 LAN ports, 1x WAN port (ADSL2+ modem), UPnP POWER CONSUMPTION 7W PART CODE SMC7904WBRA-N DETAILS www.smc.com FULL REVIEW Jun 2008

